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ADDITIONAL NOTES ON THE BIRDS OF LLEYN.

By O. V. Aplin, F.L.S.

As I was anxious to pay another visit to the small islands called Ynys Gwylan fawr and Ynys Gwylan fâch, and in fine weather if possible, I arrived at Aberdaron on the 27th May, 1902. But for two whole days the wind, that curse of Lleyn, blew so hard that it was impossible to get out in a boat, and the Bardsey men who came across early in the morning of the 28th were weatherbound. The third morning, however, was calm, and we got off soon after 7 a.m. There is a small breeding colony of Guillemots and Razorbills on the larger island, and some Shags breed, as also on Trwyn y Penrhyn, off which the islands lie. Puffins breed on both islands, as I suspected; the eggs were fresh, but much discoloured on account of recent rain making the birds' feet muddy. I found the nest of the Great Black-backed Gull in exactly the same spot where I found it two years before. It contained two eggs. There was no built-up nest such as the Herring-Gull makes, but merely a depression in the ground among the scurvy-grass, nine inches in diameter, and four inches deep, with a few bits of scurvy-grass at the bottom. At the side of the nest lay a casting, half as large again as a golf-ball, composed apparently entirely of Puffins' feathers! The deep-toned husky "caow" of the Great Black-backed Gull is a very impressive bird-sound, as also the angry "gag gag gag." Another pair inhabiting a stack off the mainland had possibly

been robbed of their eggs; they had none the next day. I found on the smaller island a substantial Gulls' nest, just like that of a Herring Gull, built of grass, scurvy-grass, &c., containing two very small oval eggs with streaky markings. I examined all the Gulls I could see very carefully, but could not detect *L. canus*, so I came to the conclusion that the eggs were abnormally small Herring-Gulls' eggs, and took them; but when I blew them I found that they contained yolks of a deep rich golden yellow (almost orange-yellow), whereas the yolk of Herring-Gulls' eggs is of a pale yellow. I have only taken the eggs of the Common Gull some years ago in Norway, and I forget the colour of the yolk, but I am told that it is dark and richly coloured. The eggs in question, however, have the shape and appearance of Herring-Gulls' eggs, and are not in the least like the usual type of Common Gulls' eggs. Rock-Pipits were common on the islands.

Wishing to make the most of the fine weather, I left for Abersoch in the afternoon, and on arriving there at once went out to St. Tudwal's Islands. It was lucky I did so, for the next morning one could not have landed on them. I found a little flock of eight immature Turnstones on the rocks. There were some grand old Cormorants on the larger island, but I cannot make sure if this bird breeds on the cliff or not. Shags were still on their nests, and there were some full-grown brown Shags and light-bellied Cormorants about. All, except the old Shags at the nests, flew out in a body, and settled on a low rocky islet. The Razorbills and Guillemots had laid a good many eggs, which they were loth to leave. A Herring-Gull carried off a bright green Guillemot's egg just as our boat came up. It settled with its booty on some low rocks at the foot of the cliff, and, as the boat was going fast, I was in time to frighten the Gull away, when we got the egg ourselves. The appearance of the Gull carrying off this huge bright green egg was most curious, and, strange as it may seem, the Gull had grasped the *big* end of the egg between its mandibles. The egg is now before me, slightly indented on one side at its largest diameter.

All these islands are really very pretty at this time of the year. The thrift (*Armeria maritima*) is flowering so thickly in places as to produce sheets of pink, and the dark rocks are often varied by great splashes of a close-growing light yellow lichen; rich

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green grass and masses of bright green *Cochlearia*, and clumps of white-flowered campion, all contrasting with the blue sky and sparkling sea of a fine sunny morning, and enlivened by crowds of birds, make up a most fascinating scene.

I devoted the two windy days to going round the cliffs and over the "mountains" about Aberdaron, although the gusts were sometimes so furious that it was impossible to stand up. The eastern cliffs, though often nearly sheer, are comparatively low, and, being sheltered partly by the land, are often luxuriantly clothed at the top with gorse, bramble, &c., and even clothed with ivy. Kestrels, Pigeons, and Crows nest along them, and the Heron is believed to have bred in one spot; the Barn Owl also occurs. But the great cliffs on the west have a beauty and grandeur of their own; their long steep sides sweeping down to the sea are partly grassy, lined with tiny sheep-paths, and partly clothed with long heather. At the foot are shelves of grey rock brightened with dashes of yellow lichen, and in spring gay with pink thrift where they merge into the grassy cliff. The cliffs end with a broken outwork of jagged rock, or sometimes form a perpendicular or overhanging rock-face, with an occasional hollow or cave inhabited by Shags. There is a small colony of Guillemots, Razorbills, and Shags in the steep cliff and cave at Porth Felen, and another at Pen y Cil. Herring-Gulls are to be seen where the jagged rock joins the green cliff, and doubtless breed here and there all along the coast in small numbers, as also do Oystercatchers. The upper and exposed parts of Mynydd Mawr and Mynydd Annelog are barren and wind-swept, sparingly clothed with short heather and wiry grass, but strewn with weathered stones; and all around the naked rocks—the bare bones of Lleyn—peep out. Bird-life is very scanty. An occasional Meadow-Pipit or Wheatear, a pair of Kestrels, and Jackdaws, of course in numbers, may be seen; but I watched a Raven sitting on a stone half-way down the cliff, and caught sight of a Merlin as it skimmed over the top.

This is an old breeding haunt of the Chough. There are six eggs in the Wolley collection, taken, according to Mr. Wilmot's MS. catalogue in the Cambridge Museum, "on a mountain in Aberdaron in Carnarvonshire called Mynydd yn Nyclog, opposite to Bardsey Island," in 1852, and another, probably from the same

place, taken in 1846 (*vide* 'Ootheca Wolleyana, part ii. p. 472). There is no mountain of this name at Aberdaron, and it does not look like a Welsh name. Probably Mynydd Annelog was intended. I doubt if there are more than a couple of pairs of Choughs now remaining all along this piece of the mainland coast. What becomes of the young birds, which are undoubtedly reared, is somewhat of a mystery.

A pair of magnificent Great Black-backed Gulls looked exceedingly well on a green-topped stack at the foot of the great cliffs looking out towards Bardsey, but there were no eggs on the stack. In one or two places among these barren storm-swept mountains a little deep cwm runs in from the sea, with a trickling stream at the bottom. These green cwms are so rich and lush that the contrast is striking. Deep in the good grass which makes Lleyn's early lambs famous, they stand in spring so thick in places with primroses in full bloom that one literally cannot walk without treading on them. The bracken-fronds are then just uncurling, and exceptionally tall spikes of the early orchis make beds of deep purple to delight a gardener's eye. From the top of Mynydd Annelog most of Western Lleyn is spread out before you. Northward lies a huge chessboard of banked fields, brightened up by golden gorse and white-walled grey-roofed farms, with perhaps a few low trees to shelter them. Small as these clumps are, they are sometimes sufficient for the Green Woodpecker (which I have seen close to Aberdaron), the Tree-Pipit, and Willow-Wrens. Where the plantations are more extensive, as about the beautiful old house Bodwrdda, with its adjacent stream and tiny valley, there are numbers of Wood-Pigeons and Mistle-Thrushes, Song-Thrushes (not common in the district), Chiffchaffs, Greenfinches, Spotted Flycatchers, Sedge-Warblers, &c. The Goldfinch, too, breeds. About the banked fields the Corn-Bunting skirls, and the Yellow Bunting is a very common bird. At the back of Mynydd Careg there is quite a little wood, harbouring the most westerly rookery; the Rooks, however, are very little seen at Aberdaron. The next rookery I know, going east, is at Sarn. In the middle distance is the dark brown mound of Mynydd Ystum (400 ft.), with Castell Odo, and beyond it the high moorland of Rhos-hirwaen. To the right is the wall of barren-topped hills stretching inland from Rhiw at the corner of

Hell's Mouth. It is said that of a great pack of Red Grouse which were driven from the East Carnarvonshire mountains in severe weather some five years ago, and settled down on these hills, a few remained to breed, and still do so.

I went to Nevin to examine the bird-life at the Bird Rock (Careg y llain, the "Rock of the Leap"). It is a remarkably fine bird-station; a big nearly perpendicularly-faced flat-topped buttress of rock, grey and pinkish on its face, and green-sided, standing conspicuously out from the graceful line of the coast. This grey rock-face is splashed with yellow lichen, and varied with patches of brilliant ivy, light green fern, and grassy ledges with bluebells, campion, and thrift. A jutting elbow of bare rock is washed white, and lined with rows of Guillemots and dotted with Razorbills. About the top and a little way down Herring-Gulls breed. Then comes a cliff-face with ledges occupied by a very large colony of Cormorants—scores of fine old birds streaming out over the sea one day when a boy rattled stones down from the top. Razorbills also are dotted about this front. Below again are crowds of Guillemots, and lowest of all (except one row of Guillemots) a vast crowd—thousands perhaps—of Kittiwakes, which come out like a snowstorm when they are alarmed, while their cries of "kitty-wayke" break forth at times into a volume of sound. On the south side there is a low rounded green-topped cliff, frequented by the Kittiwakes and more Guillemots and Razorbills; and beyond that another small cliff, on which are many Cormorants, and a few Razorbills, Guillemots, and Kittiwakes. Off it are two stacks with a few Herring-Gulls on the inner, among the masses of thrift; on the outer a lot of Gulls and Cormorants were sitting about, but not nesting. In the face of the great cliff there is a high cave or hollow, in and out of which Shags were passing. Fifteen species of birds inhabit the cliff, if we include the Rock-Pipits, the Wrens, whose song resounded among the rocks, and small blue Pigeons, five of which passed, unfortunately overhead, and did not give me a sight of their backs. I have good evidence that at least twelve of these (without counting the Pipit and the Wren) breed there, among them the Barn-Owl. Along the coast between Nevin and the Bird Rock are little green pastures, divided by banks and grey stone walls, sloping down, to drop finally in a green broken

cliff, often thickly starred with primroses; brightened here and there with the gorse so characteristic of Lleyn. But the fields are valuable and kept clear of it; they were in May strewn with daisies and buttercups, and stood thick with grass in which Corncrakes were calling; for this is as warm and forward a bit of land as any in North Wales, sheltered by the mountains from the only cold wind which ever blows here (N.E.), and hardly knowing frost. Nevin itself is blessed with a very mild soft climate. Some strong robust plants of *Primula japonica* in full bloom (a plant which likes a mild moist climate, and one I can never keep long at home) were growing in perfection in the inn garden, and would have excited the envy and admiration of any gardener. Potatoes had already been dug in the third week in May. This soft climate and broken gorsy ground is very favourable for the Stonechat, of which I have seen seven pairs in a day's walk, and small birds generally. The most noticeable are the Corn and Yellow Buntings, Blackbirds, and Whitethroats.

The song of the numerous Blackbirds is quite a feature of the country about Nevin and other parts of Lleyn, as also in the numbers of the birds one sees. The Song-Thrush, on the other hand, is by no means very abundant. The Sedge-Warbler is very common on the coast about Nevin, among any bit of cover not absolutely dry. In the interior of Lleyn, on the road between Nevin and Chwilog, there are some considerable woods, and the country is generally richer and more luxuriant than it is nearer the coasts. We find big hedgerows, willows, orchard-trees, and some little hedgerow timber. I noticed the Tree-Pipit more than once, and the Wood-Wren, Chiffchaff, Green Woodpecker, Mistle-Thrush, and many of the ordinary woodland birds.

Beyond the Bird Rock comes a green gorsy bwlch, and then the great dark mass of Yr Eifl, with Vortigern's green valley gouged out of it, comes down to a shallow sheltered bay and a blue sea subject to squalls from the mountains. Out across a bit of blue bay the coast of Anglesey, from the sands of Newborough Warren to the rock of Holyhead, is marked by a line of pale yellow sand dividing the dull grey of the land from the soft blue sea. But the Terns which breed there do not, for some reason, like the shores of Lleyn. Like all Lleyn mountains, the peaks of Yr Eifl are barren, their tops being little more than a

waste of grey weathered rock. Lower down their sides are covered with short heather and moss, or, in the sheltered parts of their inland slopes, deep heather and dwarf gorse. They are not high enough to be very wet, or to have the spongy moss bogs one knows so well in Merioneth. Only two peaks are to be seen from the top of the Rock, the highest and that whose supplementary crag drops into the sea. Trer Ceiri lies out of sight behind the biggest. I saw no Grouse on them this year, and could not find the Twite. Ring-Ouzels were about, just below the upper masses of rock. There were also a few Stonechats, Wheatears, and Meadow-Pipits, and Wrens in the rocks. Peewits may be seen lower down. But the Peregrine Falcon finds this bit of moorland worth hunting, for I have seen him come from it heavily weighted with some booty or other.

I have been able to get some useful information about the birds of Western Lleyn from two men, who, although they did not know the English names of the birds, are keen and accurate observers of the ways of the birds about them. One of them was very quick in picking out those he knew from Mr. Howard Saunders's 'Manual,' which I always find so useful in this way. Mr. G. H. Caton Haigh has also given me some valuable information, especially about the eastern end of the district, enabling me to add considerably to my list; and I have also to thank Mr. Forrest for some notes.

I have added the following species to my list of Lleyn birds, besides some ordinary winter visitors omitted here, which will be included in the notes I made during a visit paid to Lleyn last winter:—

Redwing.—Sometimes strikes against the St. Tudwal's lighthouse.

Blackcap.—On the 24th May I heard at least three singing in the Bodfean Woods, and saw one. Mr. Coward and I have visited these woods previously without being able to find the bird; and I should have thought it possible that the Blackcap, which was unusually abundant in its usual haunts in 1902, had chosen this year for pushing its range further west into Lleyn had not Mr. Caton Haigh informed me that he had found it fairly common in the woods and gardens at Broom Hall (east of Pwllheli), and that he had also heard it at Bodfean. I think the Blackcap is very locally distributed in Lleyn, and that it is probably (at present) only fairly common in certain years.

Long-tailed Tit.—I saw a pair apparently breeding near Bodfean Church on the 24th May. Mr. Caton Haigh tells me it is common in the plantations and gardens at Broom Hall, east of Pwllheli.

Kingfisher.—Mr. S. G. Cummings kindly tells me he saw a pair at Edeyrn in August, 1901.

Barn-Owl.—This bird was well described to me as haunting the cliffs about Porth Mendwy and the Bird Rock, where it is said to breed. An amusing description of it was given by one man, who began by saying there was a bird with a face like a cat.

Long-eared Owl.—Mr. Caton Haigh tells me that he has seen a good many in the fir-plantations and park at Broom Hall.

Snow-Bunting.—Mr. Caton Haigh has only seen one in the district, *viz.* a bird in immature dress, which flew in at a window in Broom Hall, and was kept alive for some time.

Quail.—Mr. Caton Haigh has only once met with it in Lleyn, *viz.* a single bird in a turnip-field at Broom Hall in September, 1900; but Mr. C. Lloyd-Edwards, of Nanhoran, told him that it had often been shot on his land.

Rock-Dove. — The Welsh name given to me for this bird is "Yscythan" (the Ring-Dove being "Colomen y coed"). Well known to one of my informants, who took eggs this year. I searched the locality with him between Porth Mendwy and Pen y Cil, on the 28th May. We saw some Pigeons flying out of the cliffs, but they all had blue backs. My companion, however, insisted that there were some with white on their backs; and presently I had a good view of what were, as far as appearance went, a pair of genuine Rock-Doves. I saw five small blue Pigeons at Bird Rock, but they flew directly overhead, and I could see only their under parts.

Grey Plover.—Mr. Caton Haigh writes that it is often to be seen on the shore at Afon Wen in winter.

Sanderling.—I saw two on the shore east of Pwllheli on the 21st May, 1902; they were immature birds in partial summer dress, with white under parts.

Bar-tailed Godwit.—I saw two immature birds on the shore west of Pwllheli on the 26th May, 1902.

Turnstone.—One on the shore east of Pwllheli on the 21st May, 1902, and eight on St. Tudwal's Island on the 29th,—all in immature dress.

Woodcock.—Plentiful at Aberdaron and on Bardsey Island in very severe winters. About the middle of March, 1903, Mr. Caton Haigh, when fox-hunting, put up a good many at Llanbedrog and on Carn Madryn, which were probably on migration.

Jack-Snipe.—"Myniar." Occurs in winter about Aberdaron. One seen in November, 1902.

Greenshank.—Mr. Forrest mentions that Mr. Day told him that this species is rather numerous on the flat coast west of the mouth of the Dwyfawr, and that he had shot six at different times.

Knot.—The same gentleman, in severe weather early in 1895, saw a very large flock of Knots on the same coast, and shot several birds.

Stormy Petrel.—Known at Aberdaron as appearing at sea in changeable weather. The searches I have made for breeding birds have not at present been successful.

Shoveler.—Mr. Caton Haigh tells me that an adult drake was shot on a pool on Pen y chain in the winter of 1900–01. Mr. Forrest saw, while they were in the hands of a birdstuffer, a duck and drake, which he subsequently learned were killed close to Pwllheli in the second week in December, 1902, where they had been met with previously.

Pintail.—Mr. Caton Haigh once saw a small flock of these Ducks on the Afon Erch, but did not shoot one.

Pied Woodpecker.—I repeatedly heard the loud rattle of this bird in the Bodfean Woods on the 24th May, 1902, but could not get a sight of the birds, as I did not like to go into the woods at that spot. I have always expected to find this species in the Lleyn Woods, and Mr. Caton Haigh thinks he has seen it in the district, and that it has bred in the woods at Broom Hall; Mr. Lloyd-Edwards, of Nanhoran, told him that it was rare there.

White Wagtail.—On the 18th April, 1898, Mr. Caton Haigh saw a party of about seven or eight on the seashore at Afon Wen. I have seen it on the Merioneth shore in May.

Water Rail.—There is a stuffed Water Rail in a public-house near Pwllheli; killed at least thirty years ago, and doubtless a local specimen. Mr. Caton Haigh has seen this species in the marsh between Pen y chain and Pwllheli, but thinks that it is rather scarce.

Bittern.—Mr. Caton Haigh tells me that one was picked up in a disabled condition in the marsh not far from Abersoch Station, and is preserved at Broom Hall; and that two are said to have been seen by the lake at Glasfryn, he thinks, in 1900.

Whooper.—He also tells me that the Whooper has visited the pools at Afon Wen several times.

Bean-Goose.—Also that he saw a Bean-Goose there on the 20th October, 1898, and that there is a local specimen preserved at Broom Hall.

I have made the following further notes on species mentioned in my former papers:—

Dipper.—I saw a Dipper in the Afon Rhyd-Hir, near Hendre pen prys, on the 26th May. On the coast near Aberdaron there is a little narrow cwm where the Afon Saint comes down, emerging from a tunnel, partly natural, into a narrow chasm with a tall ivy-clad rock-face on one side. It is a very pretty place with luxuriant vegetation, the rocks being decked with clumps of hart's-tongue fern and gigantic plants of the wall-pennywort (*Cotyledon umbilicus*) a foot or eighteen inches high. The sides of the cwm spread out into broken ground lower down, overgrown in parts with gorse and bramble bushes, a favourite haunt of the Red-backed Shrike. The Dipper has often nested inside the little tunnel; also in Aberdaron Mill, and this season at a spot some way up the Afon Fawr. Mr. Cummings tells me he saw Dippers on the Afon Geirch, near Edeyrn, in August, 1901; and Mr. Caton Haigh says it is common on the Erch, and that he has seen it in the Bod-y-groes river, and once in a little ditch near Coed Rhos fawr. Nevertheless the Dipper cannot be called a common bird in Lleyn, and you can go about the country a good deal without seeing one, a thing you can hardly do in some parts of North Wales.

Grey Wagtail.—This also bred in the chasm at Porth Saint, on shelves in the rock, for several years; but this season the birds had probably changed their nesting-site for some spot in the ivy-clad cliff. I saw a full-fledged young one there.

Red-backed Shrike.—I saw a male perched on the bramble bush in the upper part of the cwm in which I found the nest the year before; also a pair about the foot of Mynydd Mawr, and another pair not far off near the most westerly farm, close to Gwddel Moch, which had a nest ready for eggs in some bramble on the top of a bank dividing two little fields. This bit of country has a warm aspect, being sheltered by Mynydd Mawr, and the broken ground is well clothed with gorse and brambles. I also saw a female Shrike at Nevin. Mr. Cummings has seen a pair with young at Aber Geirch, near Edeyrn, on the 1st August, 1901.

Goldcrest.—Seen at Bodfean and Llanbedrog. It has been known to strike against the lighthouse on St. Tudwal's.

Whinchat.—Quite uncommon. In 1902 I only saw two, both near Nevin. Mr. Cummings saw one at Abersoch in June, 1901.

Bullfinch.—Not common. A pair at Bodfean.

Coal-Tit.—One at Bodfean.

Tree-Creeper.—Bodfean.

Ring-Ouzel.—Seen again on Yr Eifl, just below the mass of loose rock of which the top of the largest peak is formed. The wings and legs of two which struck St. Tudwal's Lighthouse on Sept. 14th, 1901, were sent to me.

Hedge-Sparrow.—I find this is quite common.

Wood-Wren.—In addition to localities mentioned in former papers I noticed it in Coed Rhos fawr between Nevin and Chwilog.

Lesser Redpoll.—Mr. Cummings tells me he saw one or two near Abersoch in June, 1901; this is the first record I have of the bird in Lleyn in summer.

Starling.—On the 16th March, 1902, a large flock played round the light on St. Tudwal's nearly all night. There were thousands of them. The keeper, going out on the gallery, was soon covered with the birds. A visitation of this magnitude he had never known previously, although the Starling strikes the light more frequently than any other species.

Nightjar.—Fairly common. I heard two at once at the foot of Carn Bodfean, and another at Abersoch. Mr. Cummings found the young just hatched at Abersoch in June, 1901.

Green Woodpecker.—Quite a common bird in Lleyn. Very common in the Bodfean Woods. I heard one hard at work inside a tree, and waited until it put its head out of the hole, perhaps to rest and get cool, as it remained with its head out for several minutes. I noticed birds at Llanbedrog, Coed Rhos fawr, Nanhoran, and Nevin, and even in a little clump of trees standing by a farm at Llanllawen, near Aberdaron, the most westerly spot in Lleyn that it could well inhabit in the nesting season. It would, indeed, be unusual if in May one passed down that glorious road which with gentle windings sweeps along the Nant of the Horan, now between belts of varied woodland, now hemmed in with steep ferny and heathery heights capped with Carn Saethon and Carn Anneddol (haunts of the Kestrel) without hearing the laugh of the Green Woodpecker. When last I passed down the Nant, which reminds one of parts of the Ardennes, a thick cold mist was drifting through it, but even then its charm was strong upon me. At Nanhoran itself, too, where the wild hyacinths make the woods in May a sheet of blue, the Woodpecker's cry, mingled with the Wood-Wren's shiver, the song of Blackbirds, and the ringing note of the Chiffchaff is often to be heard. The green park-lands here, where Pheasants feed out at the wood-edges in the evening, present a strange contrast to the bare wind-swept country around.

Merlin.—Two nests were found this year on sea-cliffs, and I saw a bird on Mynydd Annelog in May. One nest was at a place where the

cliff was in ledges; it was near the top of the cliff, in a little hollow. The other, which contained three eggs on the 19th May, was on a little ledge on a sloping buttress of rock, not far down, at an elbow in the cliffs. The male Merlin sits on the eggs, as was proved in another part of Wales.

Peregrine Falcon.—I visited a breeding pair which had an eyrie in an inaccessible place—a squarish hollow or cave, with sheer rock-face below, and overhanging rock above. There was a good growth of rich green grass at the mouth of the cave, and two big stones which made it more difficult to see in. The young appeared to be hatched. I also knew of another eyrie with young.

Sparrow-Hawk.—Not common. Mr. Cummings saw one on several occasions at Edeyrn in August, 1901. Mr. Caton Haigh has often seen it in the woods at Broom Hall, but remarks that it is not so common as in most parts of England. He noticed several coming in to roost in the woods at Nanhoran about the middle of March, 1903.

Stock-Dove.—Several about the Bodfean Woods. I had in the previous year seen it inland between Sarn and Abersoch.

Ring-Dove.—This is much more abundant than I had supposed. It is very numerous about Bodfean. Here at the foot of the Carn are the tallest trees (conifers, &c.) I have seen in Lleyn; tall trees also grow in the humid belt of woodland which follows the course of a streamlet there, where laurels and rhododendrons grow to a great size. Numbers of Ring-Doves, too, are to be seen at Nanhoran, and again east of Pwllheli, in the neighbourhood of Broom Hall. I noticed a good many up one of the little valleys running inland from Aberdaron, where I saw ten flying together in May.

Red Grouse.—(Iar Mynydd). About four or five years ago, in very hard weather, I am told that some hundreds of Grouse came to Rhiw, and many of them went on to Bardsey. From the latter they soon disappeared, but some stayed on Rhiw and bred, and a few are said to do so still (1902). They were doubtless driven off the high Carnarvonshire mountains by deep snow.

Common Sandpiper.—Mr. Cummings saw a pair near Porth Caered, 19th to 28th June, 1901. I have no doubt that the birds breed in Lleyn, although the eggs have not yet been found.

Snipe.—I believe breeds in some marshy ground near Aberdaron, where it is common in winter. In hard weather Snipes are trapped at the springs on Bardsey.

Common Tern.—Mr. Cummings has seen them when Mackerel fishing off Trevor, 7th September, 1895—no doubt birds from Anglesey. I have often wondered why this bird and the Arctic Tern do not breed in Lleyn.

Heron.—Mr. Caton Haigh informs me that the heronry at Broom Hall, near Pwllheli, consists of about fifteen or twenty nests, and that there is another small heronry of six or seven nests at Gwyn fryn, just on the eastern borders of the district. A pair of Herons are believed to have bred though the nest was not seen) in the cliffs near Porth Mendwy, where the cliffs are much overgrown with ivy, bramble, &c.

Gannet.—Often seen off Aberdaron in the Mackerel fishing season. Mr. Cummings has seen them off Trevor in September, 1895.

Puffin.—The Puffins were late in coming to St. Tudwal's in 1902, not having arrived by the 1st April. Razorbills and Guillemots came on the 10th March, about the usual time. With reference to my remarks on the published illustrations of the Puffin, in which it is represented in a wrong and the right attitude, I should like, in justice to the artist and publishers, to call attention to the coloured plate in Cassell's (Brehm's) 'Book of Birds.' On this plate the Puffin is correctly depicted standing upon its feet (popularly so called) alone, with the tarsi nearly upright. Messrs. Cassell have been good enough to inform me that the book was published in 1870–2, and that the plate was drawn by Mr. F. W. Keyl. This then is the earliest correct illustration (after Willughby!) of the Puffin in English books with which I am acquainted. When I wrote my former paper (Zool. 1901, p. 147) my copy of Donovan's 'Nat. Hist. of British Birds,' 1794, was in the binder's hands, but I may as well say now that he too drew the Puffin (plate viii.) resting on the whole length of the tarsi.

Manx Shearwater.—I think the mass (two big handfuls) of short grass one finds (in some cases) in the breeding-holes is collected by the birds, for I found in one occupied hole bits of green grass which had been gathered not more than twenty-four hours before at the most.

Lesser Black-backed Gull.—Not at all common. I saw one adult bird at Pen-y-chain on the 21st May.

THE BIRDS OF DUNGENESS.

By Thomas Hepburn.

A fortnight or more spent in the vicinity of Dungeness Beach enabled me to considerably amplify the notes which I made in 1900 on the birds of this interesting district. Making my headquarters close to Rye, I extended my walks over the whole of the beach, and over a much larger portion of the marsh on the landward side than I did before, including also the stretches of beach and marsh close to Rye on either side of the estuary of the Rother.

A line drawn from a point on the coast somewhat to the south of Littlestone, through Lydd to Jury's Gap, would cut off a triangle of land, with Dungeness Lighthouse at its seaward apex, enclosing practically the whole of Dungeness Beach proper—an area of land sometimes two or three miles wide, which is almost entirely covered by a deposit of pebbles. To the north and west is the marsh country, but the dividing line between the marsh or grass land and the shingle is of course much broken up, narrow points of grass land running into the beach; and occasionally a long strip, generally with a big ditch, or sewer, as it is called, running in the centre of it, makes a narrow gap through the pebble country right up to the sea-front.

I do not know whether there is any scientific explanation or reason why the sea should throw up a huge collection of pebbles at particular spots on our coast. In the case of Dungeness it has evidently been the work of a lengthened period of time, and there are distinct ridges, roughly parallel to the coast-line, which show how the sea has been gradually receding and leaving behind it the banks of shingle. The more ancient of these ridges, where they have been undisturbed, are becoming covered with vegetation, which generally grows most freely on the crests. In some parts this vegetation consists of stunted blackthorn, sloe, and broom bushes, which all seem to be trying to learn how to grow

horizontally; in other places there are considerable clumps of holly and elder bushes, trimmed off to a regular shape on the seaward side by the wind. On the outskirts of the beach there are many patches of gorse, which give a vivid mass of yellow when they are in bloom; and the sombreness of the beach is otherwise relieved by beds of thrift and numerous solitary foxgloves, and nearer the sea by thriving plants of sea-holly and horned poppies with their yellow blooms. The more recently formed ridges are all beginning to show a faint tinge of green, caused by straggling blades of fine grass, which must obtain what nourishment they need from the decomposition of the minute lichen or moss with which most of the stones on the surface of the beach are covered. This scanty beginning of a soil is added to year after year by the dead grass-blades, until there is a sufficient collection to give growth to larger plants. Apart from the birds, the chief living wild creatures to be seen on this waste of stones are Hares, which are numerous, a few Rabbits, and a good many Grass-Snakes.

The expanse of marsh land stretches back for miles, its limits being almost accurately defined by the military canal, which runs from Hythe to Rye and Winchelsea. This marsh land is a perfect network of ditches, which drain off and carry away the surface water from the soil, emptying themselves into bigger channels (generally called "sewers"), which in their turn empty themselves through sluice-gates into the sea. Many of these sewers run through low-lying flats, where they spread out beyond their banks, forming swampy places often overgrown with reeds, and making a favourite haunt for Wild Ducks, Moorhens, Coots, and Dabchicks. There are not many roads in this marsh, and where the ornithologist finds most to interest him there are no roads at all, so that he often has practical proof that the shortest way home, after his day's tramp, is a very long way round, owing to the difficulty of finding the various planks and foot-bridges by which to cross the ditches and sewers.

From Jury's Gap to near Rye the marsh land runs close up to the sea-front, a large tract of sand-hills forming a barrier between it and the sea in one part, embankments and the ridge of pebbles thrown up by the tide protecting it elsewhere. In these sand-hills, the fishermen tell one, Sheld-Duck used to nest years

ago, but golf-links, with their accompaniment of numerous sharp-eyed caddie-boys, do not make them a very desirable breeding-ground for birds at the present day.

On the east side of the mouth of the Rother there are some small stretches of shingle, and on the west side there are some larger ones, but in neither case approaching in any way the extent of the beach at Dungeness; and, owing to the proximity of Rye and Winchelsea, they are not nearly such an interesting hunting-ground for the ornithologist as the large beach surrounding Dungeness Point. It may be as well to say that the physical difficulty of walking for a day over this loose shingle is a considerable tax upon one's powers, and that it is the best plan to make use of the wooden "back-stays" used in the locality, by means of which one is able after a little practice to acquire a sliding movement over the surface of the beach, and to attain a greater speed at a less cost to one's shoe-leather, as well as one's muscles, than one would by attempting to walk in the ordinary way.

It is the large expanse of pebbly beach near Dungeness Lighthouse which forms the stronghold of the Kentish Plover (*Ægialitis cantiana*), and the Stone Curlew (*Œdicnemus scolopax*). Neither of these two birds is to be seen at the present day, on the smaller patches of beach on either side of the mouth of the Rother near Rye. The colonies of the Common Tern (*Sterna fluviatilis*), and the Little Tern (*S. minuta*), are also to be found only on the Dungeness Beach; for, although I often noticed individual birds of both these species feeding along the river and in the ditches in the vicinity of Rye, as far as I could make out they did not take up permanent quarters on any of the stretches of shingle there. The Terns had hardly begun to lay in any numbers before I left. The earliest date on which I heard of the Common Tern's eggs being found was May 16th, and I saw some myself on the 18th May, and on that date I also saw some Lesser Tern's eggs, but in neither case were there more than one or two eggs in a nest. I suppose there is a possibility of a few Arctic Terns (*S. macrura*) breeding on the beach. I watched a pair of them for some time one afternoon fishing in the outer bight of a kettle-net. They came so close to me that I was plainly able to distinguish the grey colouring of the breast and flanks.

The Kentish Plover, notwithstanding all vicissitudes, seems to hold its own, and I think I am safe in saying that there were as many birds breeding on the beach in 1902 as in 1900. My fisherman friend, whose acquaintance I made on the occasion of my former visits, gave me some interesting information as to the numbers and distribution of this bird on the beach. During a morning's walk with him we saw two pairs of the birds, and he told me that he knew at that time of three other pairs in different parts of the beach. He also said that he had been recently watching twenty or more birds of this species feeding in small mobs on Romney Sands, which he considered to be last year's birds and non-breeders. The previous autumn (1901) he told me he had counted forty birds in one flock, which were no doubt getting together preparatory to leaving this country.

My companion had on the previous day (15th May, 1902) found a nest belonging to one of the pairs of birds we had just seen. On walking towards it we saw one of the old birds rise about thirty yards from us, and it was almost immediately joined by its mate, and both birds flew away quickly out of sight over a ridge. After looking at the nest we concealed ourselves in a hollow, from which we could watch the spot where the nest was. In about ten minutes a single bird came back and settled on the beach not much more than ten feet from the nest. After a succession of short runs, several of which were made in reverse directions, it stood for a few moments quite still (actually not more than twelve inches from its eggs), and then with a short quick run settled on them. It was such a dull day that it was most difficult to distinguish the bird as it ran over the pebbles, and when it settled on its eggs it disappeared from my sight altogether. We then again walked towards the nest, but I failed to detect the bird move from its eggs, and only caught sight of it when it took wing about ten feet away from its nest. The nest contained three eggs, which I noticed were not all with the pointed ends to the centre, and was situated on the crest of the ridge of pebbles. The nest hollow was scratched out close to a mossy patch of stones, and it was thickly lined with short broken pieces of rotten twigs and sticks. I think this lining of the nest with vegetable matter is unusual. The hollow measured 3 in. diam. by $\frac{3}{4}$ in. deep.

On the 19th May I was rather surprised to disturb three Kentish Plovers feeding along the edge of a swamp three miles inland. There was no doubt about them, as I had a good view of them through the glasses, and could see the broken pectoral band. On the 20th May I was watching a pair for some little time on the beach near Littlestone. As it was a bright sunny day I found them comparatively easy to follow with the glasses. Occasionally they came so close to me that I was able to distinguish all the details of their plumage. They have a whistling call-note, which is not unlike that of a Ringed Plover abruptly cut short in the middle.

I should say that the Stone Curlew was, if anything, more numerous than in 1900. I saw during my stay nine birds in distinctly different parts of the beach. The fisherman, mentioned above, told me that he had seen in the course of two days birds of this species which he considered represented twelve distinct pairs. (This was during the time of my visit.) And that during the previous autumn (1901) he had counted forty-eight birds in one flock, and had also disturbed numerous single birds close to where he had seen the large flock. From information given me by him and others, I counted that at least six clutches of eggs had already been taken on the beach that season. (May 16th, 1902.)

I spent some time watching one of these birds, which I found on the 5th May sitting on a single egg. The bird rose from the beach, close to a patch of broom and mossy ground surrounded by shingle, when I was about fifty yards distant from it. I found afterwards that it must have risen right off its egg. It flew away close to the shingle, and after it had topped the first ridge of pebbles I did not see it again, although I heard two soft whistles a little while afterwards. The nest hollow was scratched out close to a dead broom bush, in a spot where earth and pebbles were mingled together. I visited the nest again on the 7th May, this time coming up to it from a different direction where some furze bushes gave a little shelter. When about forty yards distant I saw the bird move off its egg, run a few yards, and then crouch down on the beach. On my standing still and looking at it through the glasses it flew away, never rising more than five feet above the surface of the beach, and flying with very little

movement of its wings. This time I kept it in sight until it settled about two hundred yards distant, and ran away amongst some broom bushes. This was at 11 a.m. At 3 p.m. I passed the nest at some distance on my way home, and saw the bird rise, apparently right off its egg, and fly away as before. On the 9th May I again looked at the nest. As I came up the bird ran off its egg, and crouched down as before. On this occasion, it being a dull cloudy day with a very bad light, the protective powers of the colouring of the bird were strikingly exemplified, for as soon as the bird crouched it seemed to disappear from sight. It allowed me to come within ten yards of it, at which distance I was still unable to distinguish it until it moved, although I was looking at the actual spot from which it flew. As I had good reason to suppose that the nest had been found by some boys, and was not likely to be left any longer undisturbed, I took the single egg. It is possible that there is some truth in the general idea amongst the men on the beach, that if a Stone Curlew has its first clutch of eggs taken, its second clutch will consist only of one egg. This egg was already showing decided signs of incubation, and it is probable that this bird would have laid its second egg at a shorter interval than six days if it had been going to lay two eggs. The hollow of the nest was now much more trodden down than on the first day I saw it, and pebbles had been scratched into it and trodden into the earth, making a smooth paving of stones over the whole of the depression, which had also some small twigs of dry broom lying in it. The Stone Curlew seems rather to favour the landward side of the beach where grass and pebbles intermingle, or, if they are seen more to the centre of the beach, it is where there are strong patches of broom and gorse growing on the shingle.

Redshanks (*Totanus calidris*) were fairly numerous, and Lapwings (*Vanellus vulgaris*) and Ringed Plovers (*Ægialitis hiaticola*) were both very numerous. The latter are well distributed all over the beach country, aud are quite as numerous on the shingle near Rye as at Dungeness. I spent much time in observing both the Lapwing and Ringed Plover, and began to consider myself, towards the end of my visit, quite an expert in watching them on to their eggs. Their behaviour when they have eggs is somewhat similar. We may take one instance as an example: I started

watching several Ringed Plovers that were running about on the pebbles, and by a piece of good luck I happened to concentrate my attention on a bird that was the possessor of a nest and eggs. After a short interval all the birds except the one I was watching flew away. After it had been left alone about ten minutes it started running over the shingle, going along for short distances, and stopping a moment or two after each run; when it had gone thirty or forty feet all in one direction, it turned and went back in almost the same direction as it had come, taking some fairly long runs without stopping; then, with a short run of about twelve inches, it settled on its eggs, only its head and neck being visible to the observer. When I rose from the pebbles and walked towards it, I had not walked many paces before I saw it crawl (it is the only word to properly describe its stealthy movement) off its eggs, and run as hard as it could over the ridge, only to be visible again when it took wing. After a short search I found the four eggs in the nest hollow. I watched the same bird on and off its eggs several times, and found that it invariably returned to its eggs by a devious course, and when disturbed it always ran a few feet before taking flight. Sometimes the eggs were all with the small ends pointing to the centre, at others they were lying in irregular positions. This seems to tend to prove that the sitting bird makes a point of arranging its eggs with the points to the centre, but that occasionally when leaving the nest hurriedly it disturbs their position.

The same day (May 10th) I caught some nestlings of this species. My impression is that the nestlings, lying close on the beach as they do, are far more difficult to perceive than the eggs. In this instance I saw two old birds with three young ones through my glasses at some distance from where I was lying on the beach. Keeping my eye on one of the young ones as well as I could, I walked towards it. It started running away at first, but, when it found I was overtaking it, it squatted. On coming up to the spot I was unable to distinguish it, so lay down on the beach to see if I could catch sight of it moving against the skyline, but without success. I was just moving to get up and go away when I caught sight of it straight in front of me, and not eighteen inches from my face. It was lying in the typical position which these young Plovers always seem to take when they

are attempting concealment (and which is capitally illustrated in the case of Stone Curlews at the South Kensington Museum), seeming as though they were trying to flatten themselves on to the ground longitudinally. I am not aware whether any of the adult English Plovers besides the Stone Curlew adopt this skulking habit, but I believe all their young do upon occasions. I have noticed it myself in the case of the Ring Plover, the Lapwing, the Oystercatcher, and the Common Sandpiper, and also in the case of some of the Gulls and Terns. It is not a simple crouching down on the ground; the outstretched neck and the evident effort to keep the under side of the throat and body as close as possible to the ground give it characteristics quite different to the ordinary skulking or squatting of many other birds which are hatched on the ground. It is curious and not without interest to note that the young of the Emu in Australia have exactly the same habit. When a few days old it is not a difficult thing to run down young Emus, and I have on more than one occasion done so in New South Wales. As soon as the young Emu found that it was being overtaken it would lie down in the grass with the same tense drawn-out attitude that the young of the Plover-kind assume. Might it not be reasonable to argue the possibility of this instinctive habit, common to two such widely different races of birds, being an inheritance from a common ancestor?

The behaviour of the old Ring Plovers when one is handling their young does not seem to be bound by any particular method or rule. I picked up this little atom of down and took it away at least half a mile to show to my wife. It was perhaps three-quarters of a hour before it was returned to the beach. On hearing its call one of the old birds immediately flew up, but it seemed quite contented when its young one was placed on the beach, running round it, and making a good bit of fuss over it, but taking no notice whatever of the onlookers. On another occasion, a few days later, when I caught a nestling, one of the parent birds went through all the antics of simulating broken legs and wings so often described in books, which culminated in the bird lying on one side, flapping its other wing in the air as though on the point of death. This bird seemed to be so pleased with its acting that it kept it up for a long while after I had left

its young one, and I looked back through my glasses when I was nearly two hundred yards distant, and still saw one wing waving in the air.

The markings of the downy nestlings are well adapted to conceal it from the observer, while the irregular shape of the young bird and the rough surface of the down make it undoubtedly less noticeable than the eggs. Its upper surface is grey, stippled with a darker shade of grey and some black, and a little tinge of yellow, and there is a narrow ring of black down round the back of the neck. The whole of the under side is white, with no sign of the black pectoral band which is such a distinctive feature of the old bird. The front of the tarsi and the upper surface of the feet and toes are greyish lead-colour, the back and under surfaces of the same parts being dull flesh-colour. The tip of the beak is black, and the base flesh-colour. There is a small tract of skin on each side of its neck, and under each wing quite bare of down.

Another nest of this species, which had been found on the 15th May with four eggs all chipped, was shown to me on the 16th with all the four nestlings hatched out and still in the nest, lying in the typical position already described, as close together as possible, and with all four beaks pointing in one direction. I could see no trace of any egg-shells anywhere near the nest. The down of these was as already described, except that there was a bare tract of skin on the shoulders. On the evening of May 20th I found a nest with two young ones hatched, and the other two eggs chipped. The following morning, at nine o'clock, a third bird was hatched, the down being still damp, and the three young and the fourth egg being all in the nest hollow. Unfortunately, as I was leaving the same morning, I was unable to watch this nest any longer. I was rather surprised in both these cases at the young staying so long in the nest after being hatched, but, as we were having rather cold weather at the time, this would no doubt influence their behaviour.

The conduct of the Lapwing about its nest and eggs was much the same as that of the Ring Plover. It would settle on the beach at some distance from its nest, and make a similar series of devious runs, until with a final short run it would settle on its eggs; also when disturbed it would generally run a short distance

before taking wing; but if taken by surprise—as, for instance, it may be if its nest is anywhere near a bank or wall—it would rise right off the nest. I also found that its eggs were often not arranged in the nest as Plovers' eggs are generally supposed to be, but I think that the irregularity is only due to accidental carelessness when the bird is leaving its nest. I caught a nestling of this species on the 12th May. Its protecting colouring was amply illustrated by the difficulty I had in finding it when I got to the spot where I had seen it moving. Its upper surface is a greyish dun-colour with black stipplings. There are patches of bare skin on each shoulder, the skin itself being black. The down on the under side is white with the exception of the black pectoral band. It is curious that the black pectoral band should be present in the nestling of the young Lapwing, and not in that of the Ring Plover, when it is quite as distinct a feature in the adult of both species. The beak is blackish, and the tarsi and feet are lead-coloured in front and above, and flesh-coloured behind and on the soles.

I should be inclined to think that the Lapwing is a rather more wary bird than the Ring Plover. The latter bird would often go on to its eggs when the observer's head and shoulders were plainly visible to it, the only necessity being to get far enough away, and to lie quite still. On the other hand, I was never successful in watching a Lapwing on to its eggs unless I got altogether out of sight behind a bush, or other suitable shelter. This of course sometimes meant being a considerable distance away, but the larger size compensated more or less for the extra distance. One would have several fruitless watches for every successful one with both birds, and it was often very puzzling to diagnose the actions of the birds. But, as a rule, when both birds of the pair were to be seen together, I came to the conclusion that they either had no eggs or an incomplete clutch, as I was never successful on such occasions in watching the bird on to its nest; or their eggs were hatched and the young were near; but in this latter case their excited behaviour would always betray their anxiety, and a little longer exercise of one's patience would probably be rewarded by a glimpse of the young ones running among the pebbles. In the case of a full clutch of eggs, with the bird sitting, you would almost invariably only see a

single bird, which would be very quiet in its behaviour, and as soon as things seemed safe would quickly commence its stealthy run towards its treasures.

The small colony of Black-headed Gulls (*Larus ridibundus*), which nest in some pieces of water in the centre of the beach at Dungeness, is not thriving. There only seemed to be a very few pairs breeding in the biggest of these ponds amongst some rushes safely out of reach of anyone without a boat. There can be no doubt that the birds are much persecuted. I came across another colony of these birds some miles inland in a reedy swamp. Unfortunately the birds here seemed to be having quite as bad a time as those on the beach. The nests were built in some coarse swamp grass growing in about two feet of water. The fabric of the nest seemed to be started from the ground, the foundation being formed of coarse sedges, and built up to from three to six inches above the level of the water, the cup of the nest being finished off with the finer tops of the reeds. There were thirty nests in this colony, of which only ten contained any eggs. The previous day had been a Sunday, but had not, I think, been a day of rest for the Gulls. There were three Coots' (*Fulica atra*) nests amongst those of the Gulls, and several nests of the Little Grebe (*Podicipes fluviatilis*) in the ditches on the edge of the same swamp.

It remains to be mentioned that I saw the following birds on this occasion, which I did not notice in 1900:—Whinchat (*Pratincola rubetra*), a pair on the marsh-land; House-Martin (*Chelidon urbica*); Sand-Martin (*Cotile riparia*); Jackdaw (*Corvus monedula*), a thriving colony in the ruins of Camber Castle; Cuckoo (*Cuculus canorus*), frequently heard and seen on the marsh-land; and Grey Plover (*Squatarola helvetica*), a pair on the beach evidently on migration. The Common Curlew (*Numenius arquata*) was less numerous, and the Whimbrel (*N. phæopus*) was more numerous than in 1900.

NOTES AND QUERIES.

MAMMALIA.

The Use of the Giraffe's Bilobed Canine.—In the course of his memoir on the Okapi, published last year in the 'Transactions' of the Zoological Society, Prof. Ray Lankester drew attention to the circumstance that all the living, and many (if not all) of the extinct members of the *Giraffidæ*, are distinguished from other ruminants by the crown of the outermost of the four pairs of lower front teeth (corresponding to the canines of other mammals) are bifid, or bilobed; this bilobed structure having been observed in the Giraffe and the Okapi, as well as in the extinct *Sivatherium* of India and the *Samotherium* of Southern Europe. No explanation was at the time given for this departure from the normal structure.

Recently I have had an opportunity of watching carefully the mode in which a Giraffe plucks the leaves from a bough. The leaves are first grasped by the long and extensile tongue, and are then stripped from the bough by being drawn between the lower teeth and the front of the palate in such a manner that the twigs of the bough itself are left practically uninjured. The lower front teeth act, in fact, as a kind of comb in stripping off the leaves; and I think there can be little doubt that the broad bilobed crowns of the outer pair of teeth have been developed in order to increase the breadth of this "comb," and at the same time to render its comb-like action as efficient as possible.

Deer and cattle, when browsing, eat the twigs as well as leaves, and since this difference in habit is correlated with a simple lower canine, while there is almost certainly some good reason for the bifid crown of that tooth in the Giraffe and its allies, there appears to be a strong probability of the truth of the foregoing suggestion. Should it be well founded it will be evident that the *Sivatherium* and other extinct relatives of the Giraffe and the Okapi fed in the same manner as those animals.—R. Lydekker.

AVES.

Strange Nesting-place for a Mistletoe Thrush (Turdus viscivorus). We have here a piece of land of about four acres, which we have planted, placing the trees about ten yards apart. Most of them are Scotch firs, and vary from three feet to four feet high. In one of these is a nest of this bird, and is only two feet three inches from the ground. It is seldom this fine Thrush builds so low; in fact, this is the lowest I have seen. The little tree is on a wind-swept hill-side, and there are trees of many sorts and all sizes in the vicinity, making it still more curious.—J. Whitaker (Rainworth Lodge, Notts).

Nightingale's late Arrival in Somerset. — Nightingales (*Daulias luscinia*) are fourteen days overdue in their arrival in this district this year as compared with last; they are well distributed now (May 1st), and steadily increasing. There are two pairs in Lyatt Wood, two pairs at Dulcote, six pairs in Park Wood—these latter can be heard singing from the Palace Moat (May, 1902). Many single pairs are to be met with through the Twin Hills Woods and Ham Woods, and in the opposite direction through Stoke Woods (abode of Long-eared Owls), and at points along the valley to Axbridge; I have not met with a Nightingale between Axbridge and Weston-super-Mare. I have proved that Nightingales live in harmony with Garden Warblers, for they nest closely together; but where I find Blackcaps I cannot find a Nightingale. Dates of arrival:—1901, April 17th; 1902, April 14th; 1903, April 28th.—Stanley Lewis (Wells).

White Wagtails at Bartragh, Killala Bay.—Supplemental to my notes (*ante*, p. 190), I may state that there was a recurrence of the visits of *Motacilla alba* on the 17th and 18th of May to the island. Captain Kirkwood, on the first-named date, met with a flock of ten birds feeding on a wet sandy flat between his garden and the seashore. (This is a favourite haunt, where they are almost certain of being seen if on the island.) This flock remained only a few hours, but next day (the 18th) he saw five birds in his garden, and evidently so tired that some of them allowed him to approach within three or four yards to where they were resting on some wire pea-supports.—Robert Warren (Moy View, Ballina).

Lesser Whitethroat in Cardiganshire. — During a residence of twelve years at Aberystwyth I have not met with a single occurrence of this species (*Sylvia curruca*) until the present spring. On the evening of May 9th I listened to its well-known song at Cwm Padarn, about a mile from this town, and watched the bird as it made its way

along the hedge. The occurrence of the Lesser Whitethroat in Western Wales must be pronounced rare and exceptional.—J. H. Salter.

Involuntary Capture of a Swallow.—The following is a cutting from the 'Waterford Standard,' May 16th, 1908 :—

"A Strange Occurrence.—Mr. Frank Davis Goff, of Rockmount, Kilmacthomas, had, on Monday last, a new if not an absolutely unique experience while fishing on the Tay, a stream that runs from the Comragh Mountains. While walking along the bank with his rod in an upright position, and the casting-line flying in the breeze, he felt a weight somewhat like that of a Trout, and on looking up to ascertain the cause he was amazed to see a Swallow dangling from the tail-fly—the bird, doubtless, mistaking the artificial fly for the natural one. He at once reeled in the line, and, gently taking off the bird, let it off, and it flew away apparently none the worse for its mistake. Can any of our readers relate a similar incident?"

I cannot find in any of the text-books that I have on British Birds, or in the pages of 'The Zoologist' for the last twenty-five years, any account of a similar capture of *Hirundo rustica*, though I have often thought that such an occurrence was quite possible. Mr. E. F. Bisshop relates (Zool. 1886, p. 417) that while fishing once for Tench three Swallows perched on his rod at one time, but this was apparently while it was fastened into the ground and stationary. The capture of a Swallow by an artificial fly must be very unusual. It seems strange that a bird with such a sharp eye could be deceived.—William W Flemyng (Coalfin, Portlaw, Co. Waterford).

[In Boosey's 'Piscatorial Reminiscences and Gleanings' (p. 240) two records are given of Swallows being hooked in a similar manner. I have met with other instances, but cannot for the moment remember where published.—Ed.]

Goldfinch (Carduelis elegans) in South Africa.—With reference to the note (*ante*, p. 191) on the extension of the range of this species in Australia and Tasmania, I may mention that Mr. Barton, a soldier in the Suffolk Regiment, who has lately returned from South Africa, has two live Goldfinches at the present time in Bury St. Edmunds which he caught on the hills at Heidelberg, in the Transvaal, when stationed at Boxburg. He informed me that they were common halfway up the hills and breeding, one being in the nesting plumage when he caught it. I have seen these two birds myself, and they appear to be exactly like the English Goldfinch, but if anything a trifle smaller. So far as I can ascertain, this is the first occasion upon which the

species has occurred in South Africa. Mr. Barton also showed me some Canaries which he caught in the same locality, and from which he has bred since he returned home, which I am unable to identify with any of the wild species recorded from that region, as they vary so much in colour and markings that no two of them are alike. Some are nearly all yellow, others more or less marked with green, the markings varying considerably, and being most irregular in their distribution. One bird is almost entirely yellow with a green cap, whilst others are much marked with green about the wings and body as well. They look just like the ordinary parti-coloured Canaries you see in cages in England.—E. A. Butler (Plumton House, Bury St. Edmunds, Suffolk).

[This is a most interesting record for one who, like myself, has collected and observed birds for a period of four years in the Transvaal. During that time I neither saw this bird nor heard the slightest suggestion that it was to be found in a wild condition. It is practically certain that the Goldfinches caught at Heidelberg must have been escaped birds, and it seems as equally correct to say that nothing of the kind was known up to near the end of 1896, when I left the Transvaal. A friend who kept imported Goldfinches in his aviary at Pretoria complained that they were difficult to keep alive for any length of time. I have written to the Transvaal for further information on this subject.—Ed.]

A Vanishing British Bird.—In the April number of this Journal Mr. Robert Warren protests against the continued persecution of the Red-throated Diver at its single Irish breeding-haunt. It is unfortunately only too easy to point to other cases of a similar kind. But for the greed of private egg-collectors, who fill their cabinets with clutches of British-taken eggs of our rarer species, the Kite, though in small numbers, and in a limited district, would be safe from all immediate danger of extinction. Instead of this we find it reduced, as far as Wales is concerned, to a miserable remnant of two or three pairs. All who have seen *Milvus ictinus* upon the wing will agree with Knapp, the Gloucestershire naturalist, when he terms it "the finest native bird that we possess." Yet the present decade will in all probability see its extinction as a British bird. It cannot be too plainly stated that it is not the dealers who have harried the nests systematically for years who are primarily responsible for its fate, but the wealthy collectors who offer in some cases as much as £15 for a clutch of Welsh Kite's eggs. Many of them have never seen the bird in its haunts, and appear to have no interest in it apart from its eggs. In

this connection I may be allowed to quote from a letter received from Mr. R. J. Ussher, the well-known author of the 'Birds of Ireland.' He says:—"It is indeed deplorable to think that one of our finest native birds should be persecuted to extermination by the sordid greed of dealers and of collectors who show by their purchase of British-taken eggs of the Kite that the feelings of the true ornithologist are unknown to them. Both the dealers and their clients are shy of notoriety, but their names are known, and shall be handed down, that naturalists of the future may credit them with their fair share in bringing about the extirpation of this fine bird. For our present purpose it matters not whether the eggs have gone to Warwick or to Suffolk. The one clear conclusion is that the purchaser of British-taken eggs of a rare species, be it the Kite, the Great Skua, or Red-necked Phalarope, is directly contributing to hasten the extermination of yet another member of our avifauna. Incidentally our efforts to protect the Kite have brought to light other details of the war of extermination now being waged by the dealer and his patrons. We hear of thirty-seven eggs of the Common Buzzard taken from Wales as the proceeds of a single raid; of one hundred eggs of the Chough taken last year from a single Irish island; of £2 10s. offered by a Yorkshire naturalist for a local clutch of eggs of the Stone Curlew. Doubtless the increase in game-preserving, the felling of large woods, and opening up of the country have driven the Kite from most of its former haunts, but it must be insisted that it has finally succumbed to the 'oologist,' its last and most relentless foe. I have myself made the largest collection of native birds' eggs in Ireland, but have steadfastly abstained from taking or procuring the eggs of any bird in danger of extinction, such as the Golden Eagle or the Red-throated Diver, though I could easily have obtained them. I trust that English collectors may be led to see how discreditable a thing it is to be instrumental in the extinction of a British species."—J. H. Salter.

Pintail inland in Cheshire. — *Dafila acuta* is a not uncommon winter visitor to the estuaries of the Dee and Mersey, and, judging by the number taken in recent years in the duck-decoy at Hale on the Lancashire shore of the Mersey, it is becoming more plentiful. This Duck seldom wanders far from the coast, and, as it does not appear to have been recorded from any of the Cheshire inland waters, the occurrence of a drake on the pool at Norbury Booths, near Knutsford, on April 8th, is noteworthy. During the time I watched it the Pintail swam near to, but apart from, some Mallards, and did not associate with the Tufted Ducks, four pairs of which were on the water. When

I visited the pool on the morning of the 9th it had gone. — Charles Oldham (Knutsford).

The Rock-Dove (Columba livia) in Somerset.—With reference to my previous note as to the breeding of this species at Cheddar Cliffs, I should like to mention that Mr. Alfred West, of Cliff Street, Cheddar, has shot many of these birds on the bean-stubble about August; he also informs me that he saw the two eggs of this species on a ledge about four feet in a cleft of the rocks—no nest—1902. The following remark to me from the same person, and quite unasked for, should go some way towards proving the identity of these birds. I had told him of my discovery of Rock-Doves in the cliffs, and that I had seen them flying swiftly from out the ivy. He remarked, "Oh, yes; where did you stand?" I replied, "In the road" (beneath the cliffs). He continued: "The best way is to walk along the cliffs' head, and then you can see their checkered wings and white rumps." The local name is Rock-Pigeon.—Stanley Lewis (Wells, Somerset).

Dotterel (Eudromias morinellus) in Cheshire. — On May 8th, at Sealand, near Chester, I had the good fortune to see a party of fifteen Dotterel in their beautiful summer dress. When I first saw them they were wheeling about in a compact body over a fallow-field adjoining the high road; on alighting near some water lying in the field they at once proceeded to wash—with the exception of one bird who acted sentinel—giving me a good view of their actions whilst so employed. This is now a rare bird in Cheshire, though it is stated that it occurs almost yearly in spring on the moors of North-east Cheshire.—S. G. Cummings (King's Buildings, Chester).

Variation in the Guillemot.—It is quite possible, as Mr. Warren suggests (*ante*, p. 194), that the Rev. Julian G. Tuck and I are mistaken in thinking the Guillemot described in 'The Zoologist' (*ante*, p. 158) might be a hybrid, but as to its being a very unusual "freak" there can be no doubt. I am quite aware that the winter and summer plumage of the Common Guillemot differ in a marked degree, being very dark in winter as compared with the sooty brown summer dress, and we did not form our provisional diagnosis from the colour alone, as will be seen from the rough description I gave. Many dozens of specimens in both summer and winter plumage have been handled by me, and I have watched the birds at all seasons, this last winter especially, and I have noticed that, though in the usual winter plumage, the back and upper parts are very dark; one occasionally comes across a specimen having these parts quite the same as in summer. (Are we

going to find the Common Guillemot playing the same pranks as its black relative?) I must plead guilty to having slaughtered a great many Guillemots last winter in the hope of getting another doubtful specimen, but have failed utterly, as have others whom I asked to look out for any exceptionally dark or curiously marked specimens.—T. Edmonston Saxby (Halligarth, Baltasound, Unst, Shetland).

Great Crested Grebe (Podicipes cristatus) on Mansfield Reservoir. My son and self drove over to this large sheet of water to see if there were many Great Crested Grebes nesting on May 6th. The keeper's boy was there with the boat, and when we got well out I was surprised to see so many Grebe. They were near the top end, where there are the only small beds of light water-weeds; and, as the water was very high after the big rains of the previous days, the nests showed well on top of water. I was delighted to count eleven pairs—twenty-two birds—all in sight, and the boy said there were twelve pairs. We found five nests, and in one five eggs. The keeper, who has looked after the water for twenty-five years, said he had taken great notice, but had never seen five eggs in a nest before; so we took it for the collection. On rowing back I had the delightful pleasure of seeing twenty Grebe following each other up the middle of the water, and a fine sight it was, and one I never, in nesting or other season, saw before, This bird now nests on all the large lakes in this county, but nowhere in such numbers as it does on this reservoir, which is ninety-six acres in extent. There were numbers of Coots, Water-hens, and two pairs of Little Grebe, also a pair of Tufted Ducks—a grand sight.—J. Whitaker (Rainworth Lodge, Notts).

Ornithological Notes from Guernsey.— The following notes have been taken since my arrival on the island in November last (1902). The exceptionally hard weather of last winter proved very trying to many species, and I have picked up Robins and seen several other small birds quite numbed with the cold. During the latter part of November and in December the hedgerows were infested with hungry hordes of Redwings and Fieldfares, which suffered much from the guns of the local "sportsmen," and their dead bodies, together with those of Blackbirds and Thrushes, which hung daily in the town market, bore witness to the wholesale slaughter that is carried on among the feathered tribe here. *All* birds are considered game to the Guernsey "sportsman," and if severe measures are not taken soon to prevent this cruel destruction, there will not be in time a song-bird left in the island.

Redwing (*Turdus iliacus*) and Fieldfare (*T. pilaris*). — Both these

Thrushes were very plentiful in November and December, but during January I did not notice a single specimen of the Fieldfare, and no Redwings at all.

Ring-Ouzel (*T. torquatus*).—I noticed one specimen hanging in the market among a number of Redwings and Song-Thrushes.

Firecrest (*Regulus ignicapillus*).—I saw one on Dec. 9th, 1902, feeding on a furze-bush, and another in the garden here in March.

Bullfinch (*Pyrrhula europæa*).—I think this species must be very rare. I have only noticed one, and I see Mr. Cecil Smith marks it as "rare" in his list of the 'Birds of Guernsey.'

Chough (*Pyrrhocorax graculus*).—This interesting bird is nowadays only an occasional visitor, though many years ago, I have been informed, they were very common all round the island. I noticed one specimen near Moulin Huet Bay in December, 1902.

Magpie (*Pica rustica*). — The Magpie is exceedingly common, and breeds in many places.

Carrion-Crow (*Corvus corone*).—Common all round the coast.

Rook (*C. frugilegus*). — Only an occasional visitor. One specimen seen at the Forest on April 12th.

Wryneck (*Iÿnx torquilla*).—The Wryneck is very common, and is locally called the "Mackerel Bird." It was first heard here this year on April 1st.

Kingfisher (*Alcedo ispida*). — Only a winter visitor. I have a specimen shot here in November last, and Mr. Jago, the local taxidermist, told me he has had several to preserve during the last winter.

Barn-Owl (*Strix flammea*).—Very common, and a resident.

Long-eared Owl (*Asio otus*).—A scarce winter visitor. I have a fine specimen shot here last winter.

Cormorant (*Phalacrocorax carbo*).—I have not noticed many. The next-named bird seems to be the commoner of the two.

Shag (*P. graculus*).—Very common indeed. A pair I watched a few days ago appeared to be contemplating nesting. They had assumed breeding plumage.

Heron (*Ardea cinerea*). — A fairly common winter visitor. I saw in the local paper last year that "a rare bird of the Crane family" had been shot, and was exhibited in the market. This turned out to be a Heron.

Brent Goose (*Bernicla brenta*).—This Goose was fairly common last winter, and I heard and saw several passing over the island at night.

Tufted Duck (*Fuligula cristata*).—I saw a young female of this species hanging up in the market in January.

Pochard (*F. ferina*).—I saw a fine male preserved by Mr. Jago, and he informed me they are not at all common here.

Smew (*Mergus albellus*).—I saw, hanging up in the town market, two immature specimens which had been shot off the coast.

Wood-Pigeon (*Columba palumbus*).—This species is very rare here. I have myself only seen it twice.

Water-Rail (*Rallus aquaticus*).—I saw one specimen at Les Quartiers feeding beside a drain during March.

Moorhen (*Gallinula chloropus*).—Only a winter visitor. I saw several exhibited for sale in the town market during December.

Woodcock (*Scolopax rusticola*).—I noticed one or two for sale in the market during the last winter.

Great Northern Diver (*Colymbus glacialis*).—Mr. Jago informs me he has had several to preserve this last winter.

Red-throated Diver (*C. septentrionalis*).—I saw one in December, 1902, quite close to the pier. — Gordon Dalgliesh (Clairval, Collings Road, Guernsey).

BIBLIOGRAPHY.

In a quotation attributed to Dr. Radde on "*Anser rubrirostris*," Mr. F. Coburn ("On the Specific Validity of *Anser rubrirostris*," &c., *ante*, p. 49) states that "the bill [of this Goose] commences with a sharply defined crescentic-shaped band of bright scarlet lake," adding that this is "confirmed by Dr. Radde, *cf.* Dr. B. Sharpe's 'Handb. Brit. Birds,' ii. p. 229." This is a good example of these citations, copied by one writer from the other without being verified. Even in the 'Catalogue of Birds in the British Museum,' vol. xxvii. pp. 91, 92, the colour of the bill of *A. rubrirostris* is described (as by Mr. Coburn) on the authority of the late Dr. Radde ('Reis. Sibir.' p. 358). But the citation is wrong. Dr. Radde says ('Reisen im Süden von Ost-Sibirien,' &c., Band ii.; 'Die Festlands-ornis des südöstlichen Sibiriens,' St. Petersburg, 1863, 4to, p. 358):—"Auch an diesem Vogel sehe ich um die Oberschnabelbasis einen recht eclatanten rostbraunen Ton sich verbreiten, der auf einem schmalen, vielfach von weissen Federchen durchsetztem Bande, welches die Schnabelbasis einfasst, zu brennendem Fuchsroth gesteigert wird. Ausserdem war der ganze Schnabel dieses Vogels schmutzig weiss." Quite clearly Dr. Radde means here the colour of the *feathers* about the beak, not of the skin of the beak itself (which was "dirty white throughout"). Dr. Radde begins by "auch" (also), because on pages 354, 355 he made some-

what lengthy remarks on the rusty, sometimes fox-red colour of the feathers of the head (Kopfgefieder) of "*Anser grandis*" near the base of the bill.—Sergius A. Buturlin (Wesenberg, Esthonia, Russia).

I would feel personally obliged to any of your correspondents who would compile a complete or partial list of *English*-killed Ospreys, with *locality*, *date*, *authority*, and *county* for each (or, if the last item *be undesirable*, it may be left out). I am preparing a little brochure upon the Osprey, and desire to make this as perfect as I can.—J. A. Harvie-Brown (Dunipace, Larbert, Stirlingshire, N.B.).

ZOOLOGICAL NOTES FROM SYDNEY.

In my last zoological notes sent to you, I gave some particulars about the "Flying Foxes" (*Pteropus poliocephalus*), and the destruction wrought by them (1900, p. 349). The following is an extract from the 'Sydney Morning Herald' on the same subject:—

"A party of about thirty shooters raided a 'Flying Fox' camping-ground at the Burra, about five miles west of Moruya. The camp was in a large gully, where the 'Foxes' were found in hanging masses suspended from every branch and bramble in strings reaching almost to the ground, and covering an area close upon a mile square. Every cartridge was used. It is estimated that about two thousand 'Foxes' were shot, as many as fifteen being got in one shot. Notwithstanding the large number killed, apparently as many remained. They are said to be there in millions."

How wonderfully the Australian climate (or should I say climates?) seems to suit so many of the introduced animals. On every hand we find them flourishing. What a crushing rejoinder, indeed, would it have been to those "old-timers" who were wont to so repeatedly assert that "wherever there is a place for an animal in Nature, there that animal will be found." There are "Wild" Horses; then, in many parts (especially in Queensland), we have large herds of "Wild" Cattle; then there are Pigs, which, consequent upon the free existence, have become lean and wiry. (Occasionally these are hunted, and in one year recently there were killed no fewer than 17,134.) Wild Cats (the common *Felis domestica*) also abound in some districts. There are also Cavies and common Norway Rats, the latter in some cases leading an arboreal existence. Then, of course, must be mentioned the Rabbits and Hares. Though I mention these last, the Rabbits must without doubt take pre-eminence as regards numbers. Millions of them every year are trapped, shot, or poisoned, and occasionally epidemic diseases

carry off great numbers, and yet, notwithstanding all this, "still they come." They are regarded by the settlers as a great curse, as they eat up the grass that is intended for the Sheep. Not only do they eat the blades of grass, but in many parts they scrape out every vestige of a root, leaving the plains for many miles nothing but loose black soil, to be piled into hummocks or hollowed out by every wind-storm. However, grass is not the only thing that Rabbits will eat, and at times every green thing—and withal many things that are not green—are consumed by them. In support of this, I was recently shown (by a botanical friend) a photograph taken in some "mallee country" out west, depicting a piece of mallee-scrub (*Eucalyptus* of species). All the trees shown in the photo, and *many thousands of acres besides*, had been ring-barked by the Rabbits from beneath the surface of the soil up to as high as a "bunny" can reach, and in certain instances where the tree-trunk was in an oblique position every sign of bark had been removed for some distance from the ground. However, the Rabbits are not having it entirely their own way, as some of them are turned to good account, great and increasing quantities being exported every year (last year, 1902, it ran into many millions), besides what are consumed locally. In the Rabbit-infested country, beside the Sheep-runs, miles upon miles of railway are enclosed with Rabbit-proof netting so as to hinder, if not entirely prevent, the "bunnies" from migrating from one part to the other.

Hares are also abundant, though not nearly so as the preceding. During the year 1899 close upon 500,000 scalps of these animals were brought to, and capitation fee paid by, the Stock Department of New South Wales alone. English Foxes, too, are becoming rather painfully common in many parts of the country. Many complaints have been made regarding "Reynard's" depredations among the lambs, and the pest—for such they have become—appears to be spreading throughout the country to a most undesirable extent. In one case it was stated that the shepherds had to surround the Sheep with a ring of fire at night to protect them from the Foxes. Those animals, after killing the lambs, tear out and devour the tongue only, leaving the remainder of the body to rot. It is said that some flock-owners have lost as many as 20 and 30 per cent. of their lambs recently from this cause alone. This country being largely a Sheep-growing one, all things that are detrimental to Sheep are regarded as curses. Our poor harmless and interesting indigens, because they eat grass—that most valuable of substances—have to go. So, to compass the destruction of these creatures, large "drives" are occasionally organized, at which at times many thousands of marsupials of various kinds are annihilated; and

upon the heads of several species a price is set, and a stated amount is paid by the Government (through the Stock and Pastures Protection Board) for all scalps which are brought to them. In compliance with these conditions during 1900 the scalps of 122,855 Kangaroos, nearly 1,000,000 Wallabies, and 12,708 Dingoes (I do not include these last amongst our "poor harmless indigens"), in addition to the Hares and Pigs already mentioned, were brought in and paid for. It will be quite evident that this cannot go on for ever.

Leaving the mammals, and turning to the birds, we find that the English Starling, the Indian Maina, the Goldfinch, the Bullfinch, the Lark, and very many others (not forgetting the almost ubiquitous Sparrow) are rapidly spreading throughout the land, while the Ostrich is being bred here and in South Australia for the sake of its plumes.

In my last communication to 'The Zoologist' (1900, p. 355), I mentioned an instance where a "Bronze-wing Pigeon" (*Phaps chalcoptera*) flew aboard the disabled steamship 'Perthshire" when she was about five hundred miles from the Australian coast. This calls to memory another case of a somewhat similar character. Mr. George Hutton, of the R.M.S. 'Omrah,' has informed me that recently, while this steamer was making one of her periodical trips from London to Sydney, they had left Colombo some hours when they discovered a Crow (gen. et sp. ?) flying above the ship. This bird *accompanied them to Australia*, resting on the ship at night time, or when fatigued. This appears to me to be rather a unique occurrence; is it not so?—David G. Stead (Arncliffe, Sydney).

NOTICES OF NEW BOOKS.

Country Rambles; being a Field Naturalist's and Country Lover's Note Book for a Year. By W. PERCIVAL WESTELL. Illustrated with Photographs taken direct from Nature by J. T. NEWMAN, and from Drawings by ARTHUR MARTIN. Henry J. Drane.

THIS is a book of lovely illustrations—in fact, we know of no more charming collection of scenes in animal and country life—and Messrs. Newman and Martin may well be congratulated on a distinct success.

As regards the text, much may well be skipped. The author, in his preface, remarks, "There are some entries which may appear "trifling"; whilst Mr. Aflalo observes, in his introduction, "His style is throughout discursive." In other words, the letter-press might well be pruned by the hand of a friend who possessed the senses of humour and proportion. The charm of Gilbert White, Knapp, and other similar and well-known writers, is in the fact of their knowing what, as well as how, to observe; while in these days one is expected to be more or less original. In a recent discussion in the press on the question, "Why men did not go to Church," it was frequently adduced by correspondents that ordinary sermons contained too many platitudes; we believe these are fatal to a sermon, and they are certainly destructive to a book. Mr. Westell is evidently a real lover of nature, and his enjoyment of the sights and sounds around him is to be envied and followed; his volume is a good guide to what may be looked for each month in both plant and animal life.

EDITORIAL GLEANINGS.

Prof. M'Intosh continues, in the last number of the 'Annals and Magazine of Natural History,' his "Notes from the Gatty Marine Laboratory, St. Andrews." In this instalment we meet with a note "On the Frequency of the Occurrence of Pearls in the Mussel (*Mytilus edulis*)," &c. The frequency of the occurrence of pearls in the various marine and fresh-water shells is fixed by no law. Hundreds of pearl-shells may be examined without finding a single pearl, but, on the other hand, a single Ceylonese shell will occasionally produce a pearl worth a large sum. An experienced pearl-fisherman of the Tay considered that perhaps one in a hundred contained a marketable pearl. From an examination of seven hundred Mussels in the estuary of the Eden, undertaken by Mr. Russell, there was a proportion of 42·8 per cent. of pearl-bearing Mussels. In conclusion, the writer remarks that, "in connection with Dr. Lyster Jameson's views that the Eider-duck and the Scoter are the final hosts of the parasites which form the nuclei of the pearls, it may be stated that both occur in considerable numbers in the estuary of the Eden, and feed on the Mussels. Moreover, the intestine of the Common Scoter in St. Andrew's Bay harbours large numbers of these and other parasites, and thus is in contrast with that of such forms as the Guillemot and Red-throated Diver—birds more purely piscivorous, and in which such parasites are rare, though cestodes are common. It is possible also that other species amongst the many birds frequenting the Mussel-beds, such as the Oyster-catcher, may be found to harbour the same parasite."

In the June issue of the 'Irish Naturalist' will be found a most suggestive paper by Mr. C. B. Moffat (originally read before the Dublin Naturalists' Field Club) on "The Spring Rivalry of Birds." The writer approaches the question, "Why birds—and perhaps the higher vertebrate animals generally—do not increase in number from year to year." He does not altogether accept the Darwinian explanation of the "struggle for existence," nor does he the theory of "sexual selection." In fact, as regards birds, he assumes that each male bird is "cock of his walk," that he maintains his ground by combat, and that thus a very large

number of non-breeding birds of both sexes exist, prevented from breeding simply by the fact that they have no suitable ground. The chief and primary use of song, he conceives, is to advertise the presence in a certain area of an unvanquished cock-bird, who claims that area as his, and will allow no other cock-bird to enter it without a battle. Hence bright male colours—apart from what is called "Sexual Selection"—are means to a definite end; they are means by which cock-birds impress certain lessons on one another, and if they do not help a bird to *win* his plot of ground, they, at any rate, render his subsequent possession of it less liable to disturbance. He concludes that Natural Selection does not—as far as birds are concerned—require a wholesale annihilation of the weaker ones as Darwin proposed, "but can, and probably does, largely work by condemning to unproductiveness the less powerful adults."

Among the many objectors to the recently expressed views of Dr. A. R. Wallace on 'Man's Place in the Universe,' the distinguished French astronomer, M. Camille Flammarion, has entered the lists in the last issue of 'Knowledge.'

Of the infinite, he remarks that it is "that to which nothing can be added." Of space, that "if we imagine any confine to it whatever, immediately we pass in thought beyond it." He continues:—"In our solar system this little earth has not obtained any special privileges from Nature, and it is strange to wish to confine life within the circle of terrestrial chemistry. Nor is it less so to see a naturalist (whose theories of evolution demand the action of time as the principal factor in the succession of species) forgetting that the epoch in which we now happen to be has no special importance; that the different worlds of our solar family are at different stages of their evolution; and that, for instance, if the Moon is a waif of the past, Jupiter, on the contrary, is a world of the future. The effect of the hypothesis of Dr. Wallace is to narrow our horizon, and to take us back again to the time of Ptolemy, into the prison of a useless firmament. The greatness of modern astronomy, on the contrary, is to burst all barriers, for our science is but a shadow in the face of the reality. Infinity encompasses us on all sides, life asserts itself, universal and eternal, our existence is but a fleeting moment, the vibration of an atom in a ray of the sun, and our planet is but an island floating in the celestial archipelago, to which no thought will ever place any bounds. The careful study of our planet shows that the forces of Nature have Life

as their supreme end. Yes, life is universal, and eternal, for time is one of its factors. Yesterday the moon, to-day the earth, to-morrow Jupiter. In space there are both cradles and tombs. The red carbon stars will soon be dead; the hydrogen stars, like Vega and Sirius, are the stars of the future; Procyon, Capella, Arcturus are the stars of the present. Aldebaran seems to be already an autumn fruit. Let us open the eyes of our understanding, and let us look beyond ourselves in the infinite expanse at life and intelligence in all its degrees in endless evolution."

We have received from Mr. J. W. Tutt a reprint of his articles on the "Migration and Dispersal of Insects," which originally appeared in the 'Entomologists' Record.' This booklet consists of a recapitulation, in an orderly form, of *many* of the records made by various travellers and naturalists on the subject, and hence is a very valuable contribution to a knowledge of the observed facts, on which a future explanation of the phenomena can alone be based. It is published by Elliot Stock.

We are glad to find that the galleries of our great Natural History Museum are not only a resort for the public at Eastertime, but also that the visitors on Easter Mondays show an increase. The following figures speak for themselves:—

April 16th, 1900,	visitors	11,837.
April 8th, 1901,	,,	11,595.
March 31st, 1902,	,,	11,069.
April 13th, 1903,	,,	13,114.

Magpies, which abound in the environs of Moscow, have a bad time in store for them. One Berlin firm alone has given an order for the immediate supply of 80,000 of these birds, which will be shot to provide trimmings for ladies' hats. Russia has recently been obtaining an unenviable notoriety for the slaughter of wild birds for millinery purposes. Archangel is a well-known centre for the export of the wings and feathers of birds. Black-throated Divers' necks are sold in vast quantities there for trimmings for ladies' cloaks, muffs, boas, &c. The wings of the Willow-Grouse also are brought down in large cargoes to Archangel, one such cargo recently amounting to ten tons. The white plumage of the Willow-Grouse has the unusual quality that it can be dyed any colour and used for ladies' hats.—*Daily Mail.*

BRITISH
4 SE 1903
MUSEUM